

CHERNOBYL'SKIY, I.I., doktor tekhn. nauk; GNATOVSKIY, V.I., kand. tekhn.  
nauk.

Hydraulic resistance and heat emission in tubes of spiral heat  
exchangers. Izv. vuzov. 33 no. 4:9-12 Ap '58. (MIRA 11:4)  
(Heat exchangers)

KREMNEV, Oleg Aleksandrovich; SATANOVSKIY, Abram Lazarevich; CHERNOBYL'SKIY,  
I.I., doktor tekhn.nauk, otv.red.; ZIL'BAN, M.S., red.izd-va;  
TURCHISHIN, V.I., tekhn.red.

[Air conditioning of crane cabins in hot-working shops; combination  
air-water evaporative units] Konditsionirovanie vozdukh v kabinakh  
kranov goriachikh tsakhov; vozdushno-vodoisparitel'nye ustanovki.  
Kiev, Izd-vo Akad.nauk USSR, 1958. 58 p. (MIRA 12:3)  
(Air conditioning--Equipment and supplies)  
(Cranes, derricks, etc.--Equipment and supplies)

CHERNOBYL'SKIY, Iosif Il'ich, prof., doktor tekhn.nauk; BONDAR', Alla Grigor'yevna, dotsent, kand.tekhn.nauk; GAYEVSKIY, Boris Antonovich, dotsent, kand.tekhn.nauk; GORODINSKAYA, Sarra Abramovna, dotsent, kand.tekhn.nauk; LADIYEV, Rostislav Yakovlevich, kand.tekhn.nauk; TANANAYKO, Yuriy Martir'yevich, kand.tekhn.nauk; MIRGORODSKIY, Vasilii Timofeyevich, inzh.; STABNIKOV, V.N., prof., doktor tekhn.nauk, retsenzent; FURER, P.Ya., red.

[Machinery and equipment of chemical industries; principles of theory and design] Mashiny i apparaty khimicheskikh proizvodstv; osnovy teorii i rascheta. Pod red. I.I.Chernobyl'skogo. Moskva, Gos.nauchno-tekhn.isd-vo mashinostroit.lit-ry, 1959. 462 p.

(MIRA 13:2)

(Chemical industries--Equipment and supplies)

CHERNOBYL'SKIY, Iosif Il'ich

Mashiny i apparaty khimicheskikh proizvodstv; osnovy teorii i rascheta  
[by] I.I. Chernobyl'skiy [i dr.] Moskva, Mashiz, 1959.  
462 p. Diagr., Graphs, Tables. 23 cm.  
Bibliography: p. 459-462.

PHASE I BOOK EXPLOITATION SOV/4390

Chernobyl'skiy, Iosif Il'ich, Professor, Doctor of Technical Sciences

Vyparnyye ustanovki; osnovy teorii i rascheta (Evaporators; Fundamentals of Theory and Calculation) [Kiyev] Izd-vo Kiyevskogo univ., 1960. 262 p. Errata slip inserted. 5,000 copies printed.

Ed.: L. M. Granovskaya; Tech. Ed.: T. I. Khokhanovskaya.

PURPOSE: This book is intended for students specializing in the calculation and design of chemical equipment. It may also be used by engineering and technical workers designing evaporators.

COVERAGE: The book describes theory and methods for evaporator calculations. The purposes, physical principles and technical methods of evaporation are given. The complex process of heat transfer during boiling is considered and recent materials in this field are reviewed. Circulation problems closely connected with heat transfer of a liquid boiling in

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Evaporators; Fundamentals (Cont.)

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a vertical circuit having natural circulation are briefly described. Thermal systems of evaporators are discussed in detail. Methods for calculating single-unit and multi-unit evaporators are given. No personalities are mentioned. There are 59 references: 57 Soviet, and 2 English.

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1. Principal purpose of evaporation	5
2. Requirements for substances entering and leaving the evaporator	6
3. Physical principles of the evaporation process	7
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Card 2/5	

SHCHERRAN', Aleksandr Nazar'yevich; KREMNEV, Oleg Aleksandrovich;  
ZHURAVLENKO, Viktor Yekovlevich; CHERNOBYL'SKIY, I.I., otv.red.;  
RATNIKOVA, A.P., red.izd-va; HERESLAVSKAYA, L., tekhn.red.;  
SHKLYAR, S.Ye., tekhn.red.

[Handbook for calculating mine heat and designing air-conditioning  
equipment] Spravochnoe rukovodstvo po teplovym raschetam shakht  
i proektirovaniu ustanovok dlia okhlazhdeniia rudnichnogo vozdukh.  
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960.  
407 p. (MIRA 14:4)

(Mine ventilation)

CHERNOBYL'SKIY, Iosif Il'ich, doktor tekhn. nauk, prof.; BONDAR', Alla Grigor'yevna, kand. tekhn. nauk, dots.; GAYEVSKIY, Boris Antonovich, kand. tekhn. nauk, dots.; GORODINSKAYA, Sara Abramovna, kand. tekhn. nauk, dots.; LADIYEV, Rostislav Yakovlevich, kand. tekhn. nauk; TANANAYKO, Yuriy Martir'yevich, kand. tekhn. nauk, dots.; MIRGORODSKIY, Vasilii Timofeyevich, inzh.; RURER, P.Ya., red.; GORNO-STAYPOL'SKAYA, M.S., tekhn. red.

[Machinery and apparatus for the chemical industries; principles of theory and design] Mashiny i apparaty khimicheskikh proizvodstv; osnovy teorii i rascheta. Izd.2., ispr. i dop. Moskva, Mashgis, 1961. 491 p. (MIRA 14:10)

(Chemical industries--Equipment and supplies)



CHERNOBYL'SKIY, I.I., dr. tekhn.nauk; PAVLISHCHEV, M.I., inzh.

Experimental study of critical thermal currents in the  
boiling of a water and alcohol mixture. Izv.vys.ucheb.zav.;  
energ. 5 no. 8:113-115 Ag '62. (MIRA 17:7)

1. Kiyevskiy ordena Lenina politekhnicheskoy institut.  
Predstavlena kafedroy mashin i apparatov khimicheskikh proiz-  
vodstv.

KREMNEV, Oleg Aleksandrovich, doktor tekhn. nauk; BOROVSKIY, Vladimir Rudol'fovich, kand. tekhn. nauk; DOLINSKIY, Anatoliy Andreyevich, kand. tekhn. nauk. Prinimali uchastiye: PIYEVSKIY, I.M.; DUKHNENKO, N.T.; SHELIMANOV, V.A.; CHERNOBYL'SKIY, I.I., doktor tekhn.nauk, retsenzent; GAVRILOV, V.N., red.izd-va; ROZUM, T.I., tekhn. red.

[High-speed drying] Skorostnaia sushka. Kiev. Gostekhzdat USSR, 1963. 381 p. (MIRA 17:2)

CHERNOBYL'SKIY, I.I. [Chornobyl's'kyi, I.I.], doktor tekhn. nauk; TANANAYKO,  
Yu.M; VORONTSOV, Ye.G. [Vorontsov, IE.H.]

Measuring the thickness of the film of a down-flowing fluid.  
Khim. prom. no.4:37-39 O-D '64. (MIRA 18:3)

CHERNOBYL'SKIY, I.I. [Choronobyl's'kiy, I.I.], doktor tekhn. nauk; LUKACH,  
Yu.Ye. [Lukach, IU.IE.], kand. tekhn. nauk; GAYEVSKIY, B.A. [Haieva's'kiy,  
B.A.], kand. tekhn. nauk; KOCHERGIN, V.L. [Kocherhin, V.L.]

Apparatus for studying heat transfer to the moving polyethylene  
melt. Khim. prom. no.4:43-44 O-D '64.

Determining the coefficients of heat transfer to a moving  
polyethylene melt. Ibid.:45 (MIRA 18:3)

CHERNOBYL'SKIY I.I., doktor tekhn. nauk; KOCHERGIN, V.L., inzh.

Investigating heat transfer in the viscous flow of polymers in  
straight-line channels with a round cross section. Khim.  
mashinostr. no.1:67-73 '65. (MIRA 18:9)

CHERNOBYL'SKIY, I.I., doktor tekhn. nauk; FESHCHENKO, V.E., inzh.:  
SIDORENKO, S.V., inzh.

Investigating the drying of lactose on a vibratory drying conveyor.  
Khim. mashinostr. no.1:74-81 '65. (MIRA 18:9)

ACC NR: AP6036343

SOURCE CODE: UR/0436/66/000/005/0024/0028

AUTHOR: Chernobyl'skiy, I. I. (Dr. of Technical Sciences); Tertyshnik, K. G.

ORG: none

TITLE: Thermophysical properties of certain thermoplastic polymers

SOURCE: Khimicheskaya promyshlennost' Ukrainy, no. 5, 1966, 24-28

TOPIC TAGS: heat conductivity, heat diffusion, specific heat, thermoplastic material, polystyrene, polyethylene plastic

ABSTRACT: In order to determine the effect of structure on the thermophysical properties of polymers, crystalline polymers of various degrees of crystallinity and amorphous polymers were studied: high-density (low pressure) polyethylene (80-90% of crystalline phase), low-density (high pressure) polyethylene (55-70% of crystalline phase), and block and impact-resistant polystyrene (amorphous structure). The thermal conductivity coefficient was found to be practically independent of pressure, and in crystalline polymers in the solid phase the thermal conductivity is much greater than in amorphous ones and decreases with rising temperature. The specific heat of crystalline polymers increases with rising temperature and has a peak in the region of the phase transition; it does not change in the melt as the temperature rises. The temperature and pressure dependence of the thermal diffusivity was also studied. The investigated thermophysical properties of the polymers cover completely the range

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UDC: 678.5.004.12

ACC NR: AP6036343

of temperatures and partially the range of pressures encountered in processes by which they are formed into finished products. Orig. art. has: 3 figures, 3 tables and 4 formulas.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 006

Card 2/2



CHERNOBYLSKIY, I.L.

Mashiny i apparaty khimicheskikh proizvodstv; osnovy teorii i rascheta.  
Izd. i dop. Moscow, Kiev, Mashgiz, 1961.  
491 p. digrs., graphs. tables. 23 cm.

CHERNOBYL'SKIY, M., kandidat tekhnicheskikh nauk

Aeromechanical propeller. Kryl.rod. 3 no.11:16-19 N '52. (MLRA 8:8)  
(Propellers, Aerial)

CHERNOBYL'SKIY, M.B.

AID P - 5447

Subject : USSR/Aeronautics - training

Card 1/1 Pub. 135 - 24/31

Authors : Chernobyl'skiy, M. B., Eng.-Lt.Col., Kand. of tech. sci.  
and P. K. Vishnyakov, Eng.-Lt.Col.

Title : The instrumental methods of checking the piloting  
technique should be inculcated more widely.

Periodical : Vest. vozd. flota, 1, 79-80, Ja 1957

Abstract : In order to check the proficiency of pilots in piloting  
technique the authors suggest that a special automatic  
photographic camera for photographing the readings on  
the instrument panel during the flight should be invented.

Institution : None

Submitted : No date

GVOZDEV, B.P.; ZAYTSEV, V.I.; MITROFANOV, I.A.; SHUSHLYAKOV, N.N.;  
CHERNOBYL'SKIY, V.A.

Testing a remodelled vertical oil dust collector in the  
"Shosseinaia" gas-distribution station. Gaz. delo no.10:13-18  
'63. (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnogo  
gaza (for Gvozdev, Zaytsev). 2. Leningradskoye upravleniye  
magistral'nykh gazoprovodov (for Mitrofanov, Shushlyakov).
3. Gosudarstvennyy proizvodstvennyy komitet po gazovoy  
promyshlennosti SSSR (for Chernobyl'skiy).

KHODANOVICH, I.Ye.; KRIVOSHEIN, B.L.; GULYAYEV, A.I.; NIZIYENKO, I.G.;  
CHERNOBYL'SKIY, V.A.

Results of factory tests of an expansion-chamber condensate  
tank with automatic cleaning. Gaz. delo no.6/7:65-68 '63.

(MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnogo  
gaza, Krasnodarskoye upravleniye magistral'nykh gazoprovodov  
i Gosudarstvennyy proizvodstvennyy komitet po gazovoy  
promyshlennosti SSSR.

OVSYANNIKOVA, Ye.P.; CHERNOBYL'SKIY, V.N.

~~CONFIDENTIAL~~  
Raising the qualifications of management cadres of the municipal  
economy. Gor.khoz. Mosk. 29 no.12:24-25 D '55. (MLRA 9:3)  
(Moscow--Municipal services--Study and teachnig)

GATOVSKIY, K.M., kand. tekhn. nauk; CHERNOGLAZ, F.A., inzh.

Deformation determination in the welding of unlike metals.  
Trudy LIT no.80:27-36 '65.  
(MIRA 18:10)

CHERNOGLAZOV, B.

Training exercises. Voen. znan. 40 no.8:23-24 Ag '64.

(MIRA 17:11)



KUZNETSOV, V., starshiy inzh.; BELOUSOV, I.; CHERNOGLAZOV, M.; IVANOV, N.

We are in need of a testing area. Rech. transp. 20 no.8:47 Ag  
'61. (MIRA 14:10)

1. Gosudarstvennyy institut proyektirovaniya i izyskaniy na rechnom transporte (for Kuznetsov).
  2. Nachal'nik otdela Glavnogo upravleniya kapital'nogo stroitel'stva Ministerstva rechnogo flota (for Belousov).
  3. Glavnyy inzh. Stroitel'no-montazhnogo upravleniya No.9 tresta "Yakutstroy" (for Chernoglazov).
- (Lena River--Hydraulic engineering)

ИУЧЕННИК, Е.Б.; ПРОДОВ, Я.П.; СЕРГЕЕВ, А.П.; Т.Я.

Программа для расчета ошибок в определении положения  
дн скважины и общей деформации при расходе скважины.  
Труды ВНИИ №.14:227-233 1988.

(Petroleum engineering)

(MIRA 12:7)

VASIL'YEV, Yu.S.; SIVOKHINA, N.B.; PROLOV, Ye.F.; CHERNOGLAZOVA, T.Ya.

Permissible deflections of bottom holes from the planned  
position; a topic for discussion. Neft. khoz. 39 no.4:14-20  
Ap '61. (MIRA 14:6)

(Oil well drilling)

SIVOKHINA, N.B.; FROLOV, Ye.F.; CHERNOGLAZOVA, T.Ya.

Intersecting of the shafts of deflected wells. Trudy VNII no.36:  
13-18 '62. (MIRA 15:11)

(Oil well drilling)

MELIK-PASHAYEV, V.S.; KOCHETOV, M.N.; KUZNETSOV, A.V.; DOLINA, L.P.;  
Prinimali uchastiye: BELYAYEVSKIY, A.A.; LISUNOV, V.R.;  
NEYMAN, V.Ye.; CHERNOGLAZOVA, T.Ya.; MAMUNA, V.N.; ZHDANOV,  
M.A., prof., red.; PERSHINA, Ye.G., ved. red.; YAKOVLEVA,  
Z.I., tekhn. red.

[Methods for determining the parameters of oil and gas pools  
for appraising their reserves in platform-type fields using  
the volumetric method]. Metodika opredeleniia parametrov za-  
lezhei nefiti i gaza dlia podscheta zapasov ob"emnym metodom;  
na mestorozhdeniakh platformennogo tipa. [By] V.S.Melik-  
Pashaev i dr. Pod red.M.A.Zhdanova. Moskva, Gostoptekh-  
izdat, 1963. 269 p. (MIRA 16:5)

(Oil reservoir engineering)

MELIK-PASHAYEV, V.S.; KOCHETOV, M.N.; KUZNETSOV, A.V.; DOLINA, L.P.;  
Prinimali uchastiye: BELYAVSKIY, A.A.; LISUNOV, V.R.;  
NEYMAN, V.Ye.; CHERNOGLAZOVA, T.Ya.; MAMUNA, V.N.; ZHDANOV,  
M.A., prof., red.; PERSHINA, Ye.G., ved. red.; YAKOVIEVA,  
Z.I., tekhn. red.

[Method for determining the parameters of oil and gas pools  
for appraising reserves by the volumetric method in fields  
of the platform type] Metodika opredelenia parametrov sa-  
lezhei nefi i gaza dlia podscheta zapasov ob"emnym meto-  
dom na mestorozhdeniakh platformennogo tipa. [By] V.S.  
Melik-Pashaev, i dr. Moskva, Gostoptekhizdat, 1963. 269 p.  
(MIRA 16:8)

(Petroleum reservoir engineering)

CHERNOGOLOV, A. I.

PA 54/49T50

USSR/Engineering  
Furnaces  
Heat

Feb 49

"Instruments for Measuring the Flow of Heat in High-Temperature Furnaces," A. I. Chernogolov, VNIT (Eastern Sci Res Inst of Fuel Utilization), 8 pp

"Zavod Lab" Vol XV, No 2

Conducted experiments to determine defects of modern water-filled calorimeters (TskTI petal-shaped thermosonde and the TANICHM disk-shaped thermosonde) for measuring heat flow in that part of open-hearth furnaces where smelting occurs. Describes a new

54/49T50

USSR/Engineering (Contd)

Feb 49

thermosonde developed by VNIT which does not have the faults of above-mentioned predecessors. Used gas or mazut as heat-conducting agent and both gave satisfactory results. It is therefore possible to maintain a close check on heat transfer to and from the crucible, and thus establish the thermal system of the furnace.

54/49T50

SOV/133-59-1-7/23  
AUTHORS: Chernogolov, A.I., Candidate of Technical Sciences,  
Voynov, Yu.A. and Ploshchenko, Ye.A., Engineers  
TITLE: An Investigation of Schedules for Reversing Open-hearth  
Furnace Valves (Issledovaniye grafikov perekidki  
klapanov martenovskoy pechi)  
PERIODICAL: Stal', 1959, Nr 1, pp 31 - 42 (USSR)  
ABSTRACT: The influence of reverses on the radiation intensity  
of heat in the working space of an open-hearth furnace  
was investigated together with experimental deter-  
minations of the actual time necessary to fill gas and  
air ducts with gas and air on one side of the furnace  
and their displacement into a common flue on the other  
side of the furnace as well as the change of gas  
pressure in the working volume. The investigation was  
carried out on a 500-ton furnace during which schedules  
of the Giprostal' and Stal'proyekt were tested. The  
furnace was fired with a coke-oven blast furnace gas  
mixture carburised with oil. The distribution of the  
reversing installation and mechanical graphs of reversing  
are shown in Figures 1 and 2. Heat radiation to the  
bath and towards the front walls were measured  
Card1/4 simultaneously using VNIIMT and EPP-09 instruments,



SOV/133-59-1-7/23

## An Investigation of Schedules for Reversing Open-hearth Furnace Valves

respectively. The comparative measurements of the intensity of semi-spherical heat radiation onto the bath and directed (towards the front wall) radiation during reverses according to Giprostal' and Stal'proyekt schedules at various consumptions of coke-oven gas ( $V_K$ ), blast-furnace gas ( $V_D$ ), blown air ( $V_{VV}$ ) and oil

( $G_M$ ) as well as various pressures in the furnace ( $\Delta p$ ) are shown in Figures 3-6 and Table 1. It was found that during melting and refining periods, the radiation of heat onto the bath during reversing, according to both schedules, decreases not more than by 1% of the whole heat radiated during the half cycle of the heat exchange. During the period of heating up, this decrease amounts to 1.5%. In respect of heat radiated only from the moment of the beginning of the decrease in radiation to the moment of its re-establishment the decrease in radiation amounts to 4-5% (Figure 7). The time interval during which the decrease in radiation takes place due to reversing amounts to 45 sec. It is considerably

Card2/4 higher than the calculated break in the flame (15 sec).

SOV/133-59-1-7/23

An Investigation of Schedules for Reversing Open-hearth Furnace  
Valves

The smoothing influence of the lining of the working space of the furnace is less reflected on the directional heat radiation towards the front wall than on the intensity of semi-spherical radiation of heat to metal. Therefore, measurements of the directional radiation with the radiation pyrometer gave more accurate indications of the influence of reversing on the flame, the disappearance of the flame from one side and its reappearance on the other. The decrease in the directional radiation lasts about 35 sec and amounts to 1.5-3.5% of its initial value. Thus, it was established that reversing according to both schedules is not accompanied by a considerable decrease in the amount of heat radiated during the heat-exchange cycle and that both schedules are satisfactory. The duration of the passage of gas and air into the working space from one side of the furnace and their displacement by the combustion products into the common flue on the other side of the furnace was investigated during reversing according to the Giprostal' schedule. The entrance of air into the furnace was determined on the basis of the oxygen content in the fume-air mixture in the air vertical flue and the

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SOV/133-59-1-7/23

. An Investigation of Schedules for Reversing Open-hearth Furnace Valves

entrance of the mixed gas on the basis of  $\text{CO}_2$  content in the gas vertical flue. The moments of displacement of gas and air into the common flue were determined on the basis of changes in the chemical composition of gases in the waste-gas valves of the furnace. The experimental results are shown in Figures 8-12. The entrance of air and gas into the furnace takes place without any sharp transfer from combustion products to air and mixed gas. The actual time of the complete displacement of one type of atmosphere by another one is a few times longer than that calculated on the assumption that the combustion products are displaced frontally (without mixing) by air and gas. Changes in the gas pressure in the furnace during reverses are shown in Table 2 and Figures 13-14. It was found that on reversing according to Giprostal' schedule, the gas pressure in the furnace is lower. There are 14 figures and 2 tables.

ASSOCIATION: VNIIMT, and zavod im. Voroshilova (Imeni Voroshilov Works)  
Card4/4

CHERNOGOLOV, A.I., kand.tekhn.nauk

Physicochemical properties of smelting dust and means of controlling  
carry-over from the checkerwork of open-hearth furnaces. Trudy NTO  
chern. met. 20:409-417 '60. (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy  
toplotekhniki.

(Open-hearth furnaces)

CHERNOGOLOV, A. I.; BAS'YAS, I. P.

Dust characteristics from smelting in a large capacity open-  
hearth furnace, Trudy Vost. inst. ogneup. no.2:118-126 '60.  
(MIRA 16:1)

(Open-hearth furnaces) (Fly ash)

CHERNOGOLOV, A. I.

Determining the degree of heat regeneration in open-hearth  
furnace checkerwork. Trudy Vost. inst. ogneup. no.2:127-131  
'60. (MIRA 16:1)

(Open-hearth furnaces) (Heat regenerators)

BAS'YAS, Igor' Pavlovich; CHERNOGOLOV, Aleksey Ivanovich; MAMYKIN, P.S.,  
prof., retsenzent; LEVCHENKO, P.V., red.; SKOROBOGACHEVA, A.P.,  
red. izd-va; CHAPAYKINA, F.K., red. izd-va; TURKINA, Ye.D.,  
tekm. red.

[Open-hearth furnace regenerators] Regeneratory martenovskikh pechei.  
Sverdlovsk, Gos. nauchno-tekm. izd-vo lit-ry po chernoi i tsvetnoi  
metallurgii Sverdlovskoe otd-nie, 1961. 174 p. (MIRA 14:7)  
(Open-hearth furnaces—Equipment and supplies)  
(Heat regenerators)

CHERNOGOLOV, A. I.

Selection of a basic impulse for the continuous control and  
automatic regulation of heat processes in open-hearth furnaces.  
Izv. vys. ucheb. zav.; chern. met. 5 no.12:174-181 '62.  
(MIRA 16:1)

1. Ural'skiy politekhnicheskiy institut.

(Open-hearth furnaces)  
(Heat—Transmission)



LISYENKO, V.G.; POLZUNOV, A.M.; KITAYEV, B.I.; DEMIDOVICH, A.V.;  
KOKAREV, N.I.; CHERNOGOLOV, A.I.

Results of research on the efficiency of a mazut flame jet.  
Izv. vys. ucheb. zav.; chern. met. 6 no.10:139-148 '63.  
(MIRA 16:12)

1. Ural'skiy politekhnicheskii institut.

CHERNOGOLOV, A.I.

Defining more accurately the relation between the heat absorption of an open-hearth furnace bath and its temperature. Izv. vys. ucheb. zav.; chern. met. 7 no.10:155-158 '64.

(MIRA 17:11)

1. Institut metallurgii Ural'skogo filiala AN SSSR.

CHERNOGOLOV, A.I.; LISIYENKO, V.G.; KITAYEV, B.I.; KOKAREV, N.I.

Investigating the burner flame in an open-hearth furnace by  
an improved method of full radiation. Stal' 23 no. 3:276-279  
Mr '64. (MIRA 17:5)

1. Institut metallurgii, g. Sverdlovsk, i Ural'skiy politekhnicheskiy  
institut im. S.M.Kirova.

CHERNOGOLOV, I.G.

1. ALEKSEYEVA, A. I., Engr., CHERNOGOLOV, I. G., Engr.

2. USSR (600)

4. Plate Metal Work

7. Installing welded sheet construction according to obligatory technological rules.  
Bul. stroi. tekhn. 9 No. 21, 1952 .

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

GURKOV, K.S., kand.tekhn.nauk; KOSTYLEV, A.D., kand.tekhn.nauk;  
PLEKHANOV, G.V., gornyy inzh.; CHERNOGOLOV, Ye.K., gornyy inzh.;  
RZHANNIKOV, N.N., gornyy inzh.

New loading and transporting machine. Gor.zhur. no.2:57-59 F  
'64. (MIRA 17:4)

1. Institut gornogo dela Sibirskogo otdeleniya AN SSSR (for Gurkov,  
Kostylev). 2. Vysokogorskiy zheleznyy rudnik (for Plakhanov,  
Chernogolov, Rzhannikov).

CHERNOGOLOV IN, V.P., akademik

Cultivation of grain crops in Kazakhstan. Zemledolie ? no.4:13-18  
Ap '59. (MIRA 12:6)

1. Kazakhskaya akademiya sel'skokhozyaystvennykh nauk.  
(Kazakhstan--Grain)

CHERNOGOLOVIN, V.P., akademik

Snow retention is of great importance in increasing crop yields.  
Zemledelie 7 no.12:17-20 D '59. (MIRA 13:3)

1. Kazakhskaya akademiya sel'skokhozyaystvennykh nauk.  
(Kazakhstan--Field crops) (Snow)

CHERNOGOLOVIN, Vasilii Petrovich, akademik; SAVICH, M.P., red; KUZEMBAYEVA,  
A.I., tekhn.red.

[Pulse crops and leguminous grasses in Kazakhstan] Zernobobovye  
kul'tury i bobovye travy v Kazakhstane. Alma-Ata, Kazakhskoe  
gos.izd-vo, 1960. 153 p. (MIRA 14:6)

1. Kazakhskaya akademiya sel'skokhozyaystvennykh nauk.  
(Kazakhstan--Legumes)



BAKAYEVA, Yekaterina Vasil'yevna; CHERNOGOLOVIN, Vasil'y Petrovich;  
SHEVEYKO, A.S., red.; URBISINOV, A., tekhn. red.

[Soybean in Kazakhstan] Soia v Kazakhstane. Alma-Ata, Kaz-  
sel'khozgiz, 1963. 35 p. (MIRA 17:1)  
(Kazakhstan--Soybean)

ACCESSION NR: AT4033625

S/0000/63/000/000/0051/0083

AUTHOR: Shishonok, N. A.; Chernogor, F. I.

TITLE: Cybernetic machines of the "Ekzamenator" type

SOURCE: Programmirovannoye obucheniye i kiberneticheskiye obuchayushchiye mashiny\* (Programmed instruction and cybernetic teaching machines); nauchno-tekhn. sb. statoy. Moscow, Izd-vo "Sovetskoye radio," 1963, 51-83

TOPIC TAGS: teaching machine, programmed instruction, cybernetic machine, linear program

ABSTRACT: The article gives brief descriptions of four teaching machines of the "Ekzamenator" type: the OM-1, OM-4, OM-7 and OM-12. The purpose of each machine is explained, and its operational principle is discussed and described on the basis of a basic circuit diagram and parts list. The design considerations underlying the construction of the machines are analyzed. The order of operation with these units is given, along with examples of card-program compilation. Cybernetic teaching machines of the "Ekzamenator" type are designed to be used in the teaching process for the following purposes: the taking of examinations and quizzes on any subject; the conducting of

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ACCESSION NR: AT4033625

colloquia (seminars) before laboratory work; the conducting of control work; self-monitoring during the process of independent student preparation. Characteristic features of teaching machines of this class are the presence of feedback from the student to the machine and linear program operation. In machines of this type, response input may be effected in the following manners: sampling, digitally-coded and resultant. Teaching machines of the "Ekzamenator" type have limited possibilities in comparison with machines of the "Repetitor" type, which operate on the basis of a ramified program. However, their relative simplicity, inexpensiveness, and the fact that they can be produced on an in-house basis by institutes and organizations of an academic nature without outside help, confer on these machines unquestionable advantages in terms of rapidity of realization and introduction into the teaching process. The program of the OM-1 is interchangeable and includes five questions. After these five questions have been answered, the machine evaluates the responses according to a four-point system. The evaluation appears on a light board and is printed out on a blank form. Underlying the operation of the OM-4 is a relay-system functioning principle. Student response evaluation is made on the "right-wrong" principle on the basis of answers to programmed questions. The unit provides for two modes of operation: "examination" (interrogation, control) and "self-preparation" (self-checking). When working in the "examination" mode, the student is prevented from using the buttons marked "evaluation" and "clear",

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ACCESSION NR: AT4033625

whereas, when operating with the machine set for "self-preparation", the student controls the machine independently. The OM-7-1 operates according to a linear program with the sampler method of response. The answers are coded in a binary six-place code and fed into the machine by means of six tumbler switches. Normally, a card contains only five questions, but the circuitry provides for the possibility of increasing this number to ten questions. The answers to the questions on the cards are fed into the machine sequentially, with the switch set in the following position as the student proceeds from one question to the next. Response evaluation is given both for each question separately, as well as for a question group as a whole. Individual response evaluation is programmed by the card compiler in a point system which runs from 0 to 5. These evaluations are flashed on a light board. A correct answer is rated at 5 points, an incorrect answer - at 0 points. Insufficiently accurate answers may be rated from 1 to 4 points at the discretion of the programmer-instructor. When programming the material, instructions must be provided to aid in locating and correcting the error. In order to provide a general evaluation of all the answers given on the cards, incorporated in the system is an adder with a disc which turns a specific number of divisions, using a cog wheel and a start-stop relay system. In order to prevent the student from gaining additional points by repeating the operation of introducing a single correct answer, there is a blocking arrangement which disconnects the windings of the adder relays immediately upon termination of the original introduction of an answer to a given question. Because of this, repeated introduction of a previous or

Cord 3/4

ACCESSION NR: AT4033625

modified answer has no effect on the circuitry. The switch turns only in one direction; thus, it is possible to return to a previous question only through the original "zero" position, at which all previous evaluation results are cleared. The OM-12 teaching machine may be used to check home-work assignments and control work, and to take quizzes. In addition, the students may train during independent preparation in order to secure firmly in their minds material that has already been covered. The principle of operation of the OM-12 is based on the comparison of answers with a previously prescribed program. "The OM-1 was designed by V. P. Puganov and A. A. Neven, the OM-4 by E. A. Bernshteyn, G. H. Boyko, V. F. Kushnirenko, I. A. Kovtun, N. K. Rudyachenko and M. L. Khavin, the OM-7 by A. K. Krishtafovich, V. I. Shushpan, N. I. Dy\*nnik and V. P. Gavryuk, and the OM-12 by V. M. Petrushevskiy, V. K. Gurnov and A. A. Il'yashenko." Orig. art. has: 13 figures.

ASSOCIATION: None

SUBMITTED: 03Dec63

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: DP

NO REF SOV: 002

OTHER: 001

Card 4/4



[illegible]

the following: (1) the role of these  
institutions in the development of  
the national economy; (2) the role of  
the institutions in the development of  
the national culture; (3) the role of  
the institutions in the development of  
the national education system.

NSC 54120-2.000

**ANEXA 7**

50

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VOTE

20685

S/120/61/000/01/020/062  
E032/E314

AUTHORS: Yevseyev, V.S., Komarov, V.I., Kush, V.Z.,  
Roganov, V.S., Chernogorava, V.A. and Shimchak, M.M.

TITLE: A Multilayer Scintillation Detector for the  
Recording of Neutrons in the Presence of  $\gamma$ -rays

PERIODICAL: Priory i tekhnika eksperimenta, 1961, No. 1,  
pp. 68-72

TEXT: A description is given of a neutron detector having a high sensitivity to neutrons but a low sensitivity to  $\gamma$ -rays. The detector is designed for the energy range 5-20 MeV. The detector is similar to that reported by Baker and Rubbia (Ref. 4). The multilayer detector is based on the difference between the ranges of protons and electrons of the same energy. The detector consists of a number of thin scintillators, each having a thickness  $h$ . The scintillators are separated by opaque partitions. The device is so arranged that scintillations from layers 1, 3, 5, etc. are recorded by one photomultiplier and scintillations from the remaining layers by another. If the energy of an electron is sufficient  
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S/120/61/000/001/020/062  
E032/E314

A Multilayer ....

for it to penetrate into a neighbouring layer, then coincident pulses will be produced in the two photomultipliers. The electronic circuitry employed is such that it rejects coincident pulses. Non-coincident pulses arising in either of the photomultipliers are analyzed by a kicksorter. In this way, one can separate recoil protons from electrons due to  $\gamma$ -rays. The multilayer detector consists of 28 discs (diameter 80 mm,  $h = 4$  mm). The discs are made from a plastic based on polystyrene with the addition of 2% p-terphenyl + 0.2% NPO. The neighbouring discs are separated from each other by pieces of black paper, 0.05 mm thick. The detector consists of two identical parts placed in series. In each part, scintillations from "even" discs are collected through perspex light pipes by the corresponding to multipliers, whilst the scintillations from the "odd" discs are collected by two other photomultipliers. In order to prevent the light from the "even" discs from entering the photomultipliers belonging to the "odd" discs (and conversely), the side surfaces of the discs are separated into four equal parts and two (opposite) of these are covered

Card 2/4

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A Multilayer ....

S/120/61/000/001/020/062  
E032/E314

by an aluminum foil. Altogether, the detector incorporates 8 photomultipliers of the type ~~43~~ 43/-27 (Each photomultiplier was placed in a separate magnetic screen made of soft iron. The light guides were not in optical contact with the scintillators, which reduced the amplitude of the pulses but simplified the operation. Pulses from each photomultiplier group were amplified and equalised in amplitude. The maximum

amplitude of Co <sup>60</sup> γ-ray pulses was about 0.01 V. The pulses were then fed into an adding circuit and the pulses from the adding circuit and those from one of the photomultiplier groups were fed into a coincidence circuit and a discriminator, which were so arranged that coincident pulses were rejected while those which were not in coincidence were allowed to pass on into a kicksorter. Detailed tests carried out on this detector have shown that its sensitivity to γ-rays is lower by a factor of 2, as and its sensitivity to neutrons is higher by a factor of 2, as compared with the detector reported by Baker and Rubbia in Ref. 4. It is said that this is due to the fact that the thickness of each scintillator in the present instrument is

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S/120/61/000/001/020/062  
EO32/E314

A Multilayer ....

lower by a factor of 1.2 while the total thickness of the device is smaller by a factor of 2.7, as compared with Ref. 4. There are 6 figures and 6 references: 2 Soviet and 4 non-Soviet.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy  
(Institute for Nuclear Research)

SUBMITTED: February 5, 1960

Card 4/4

CHERNOGORENKO, M.I. [Choronohorenko, M.I.]

Larvae of trematodes parasitizing on mollusks of the lower  
Dnieper Valley in 1956-1959. Pratsi Inst. hidrobiol. AN URSSR  
no.39:99-110 '63. (MIRA 17:12)

CHEPNOGORENKO, M.I.

Seasonal changes in the larval forms of trematodes from some mollusks of the Dnna River as related to its pollution by industrial wastes. Trudy Ukr. resp. nauch. ob-va paraz. no. 3: 69-72 '64 (MIRA 19:1)

1. Institut gidrobiologii AN UkrSSR.

BLIZNYUK, I.D.; CHERNOGORENKO, M.I.

Emission of cercariae of *Opisthorchis felinus* Riv. from the  
body of an intermediate host. Trudy Ukr. resp. nauch. ob-va  
paraz. no. 3:73-76 '64 (MIRA 19:1)

1. Institut gidrobiologii AN UkrSSR.

CHERNOGORENKO, V. B.

CHERNOGORENKO, V. B.: "Thermographic investigation of a mutual aqueous system composed of sulfates and chlorides of potassium and magnesium". Kiev, 1955. Acad Sci Ukrainian SSR. Inst of General and Inorganic Chemistry. (Dissertation for the Degree of Candidate of CHEMICAL Sciences)

SO: Knizhnaya Letopis' No. 51, 10 December 1955

CHERNOGORENKO, V. B.

USSR/ Chemistry - Inorganic chemistry

Card 1/1 Pub. 22 - 28/53

Authors : Fialkov, Ya. A., and Chernogorenko, V. B.

Title : About hydrate of potassium chloride

Periodical : Dok. AN SSSR 102/4, 759-762, Jun 1, 1955

Abstract : Results obtained in the study of the well known  $KCl - H_2O$  system are analyzed. The structural diagram of this system was found to consist of two branches, namely, the formation of the ic- and formation of the anhydrous  $KCl$ . The hydrate crystals of  $KCl$  studied under a microscope had a perly brilliance and were different by their external form from anhydrous salt. The zone of existence of the  $KCl$  hydrate was established. Fourteen references: 4 USSR, 1 Italian, 4 French, 2 USA and 3 German (1890-1953). Tables; graphs.

Institution : Acad. of Sc., Ukr. SSR, Inst. of Gen. and Inorg. Chem.

Presented by: Academician A. N. Frumkin, January 12, 1955



CHERNOGORENKO, V. B.

Determination of the eutectic temperature of water-salt systems by the method of contact melting. V. B. Chernogorenko. *Zhur. Neorg. Khim.* 1, 317-22 (1966).

Salts occurring in the aq. reciprocal system  $K_2Cl_2 + MgSO_4 \rightleftharpoons K_2SO_4 + MgCl_2$  were mixed with ice at  $-70^\circ$  and slowly heated. The temp. at which eutectic melting occurred was detd. from the heating curves, as recorded by ordinary and differential thermocouples. By this system it is possible to measure the eutectic temps. of metastable quasi-equilibria, as well as stable eutectic temps. The recorded eutectic temps. are:  $K_2SO_4$ -ice  $-1.9^\circ$ ,  $K_2SO_4 \cdot H_2O$ -ice  $-1.5^\circ$ ,  $KCl$ -ice  $-10.8^\circ$ ,  $KCl \cdot K_2SO_4$ -ice  $-11.3^\circ$ ,  $MgSO_4 \cdot 7H_2O$   $\alpha$ -ice  $-5.2$  and  $-3.9^\circ$ , schoenite-ice  $-2.8^\circ$ ,  $K_2SO_4$ -schoenite-ice  $-3.0^\circ$ ,  $MgSO_4 \cdot 7H_2O$   $\alpha$ -schoenite-ice  $-0.8^\circ$ ,  $MgSO_4 \cdot 7H_2O$   $\alpha$ - $K_2SO_4$ -ice  $-7.4^\circ$ ,  $MgCl_2 \cdot 6H_2O$ -ice  $-33.8^\circ$  and  $-21.9^\circ$ , carnallite-ice  $-33.8^\circ$  and  $-21.9^\circ$ ,  $KCl \cdot K_2SO_4$ -ice  $-11.58^\circ$ ,  $KCl \cdot MgSO_4 \cdot 12H_2O$   $-34.3^\circ$ ,  $KCl \cdot K_2SO_4 \cdot H_2O$ -ice  $-10.62^\circ$ .

C. H. Fuchsman

*Inst. General + Inorganic Chemistry, Acad. Sci, USSR.*

~~SPICHOVNIKOV~~, V. B.  
CHERNOGORENKO

Category: USSR / Physical Chemistry.

Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29955

Author : Fialkov Ya. A., Chernogorenko V. B.

Inst : not given

Title : Thermography of Frozen Solutions as a Method of Investigation of Water-Salt Systems.

Orig Pub: Ukr. khim. zh., 1956, 22, No 4, 420-426

Abstract: The previously described method (RZhKhim, 1956, 54951) is utilized for a thermographic investigation of frozen solutions of the quaternary system  $K^+$ ,  $Mg^{2+}$  +  $//Cl^-$ ,  $SO_4^{2-}$  +  $H_2O$ . To obviate supercooling the thermograms were recorded during heating of specimens. Depending on the rate of cooling of the specimens under study it is possible to detect, on the thermograms, thermal effects associated with retention, on hardening, of unstable phases. Thus, in the case of system  $K_2SO_4 - H_2O$  the thermograms of specimens which were cooled at a moderate rate show

Card : 1/2

-76-

Category: USSR / Physical Chemistry

Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29955

an unstable eutectic  $K_2SO_4 - H_2O$  ( $-1.90^\circ$ ) alongside with a stable  $K_2SO_4 \cdot H_2O - H_2O$  ( $-1.52^\circ$ ); the latter is absent in thermograms of rapidly hardened specimens. An analogous phenomenon was observed also in two other systems  $MgSO_4 - H_2O$  and  $K_2SO_4 - MgSO_4 - H_2O$ . From eutectic temperatures it is possible to determine the composition of salt formed in the solution at temperatures close to temperatures of crystallization.

Card 2/2

-77-

CHERNOGORENKO, V.B

FIALKOV, Ya.A.; CHERNOGORENKO, V.B.

Determination of the interaction of substances in solution by the  
crystallization temperature of the solvent. Ukr. khim. zhur. 24  
no.1:13-22 '58. (MIRA 11:4)

1. Institut obshchey i neorganicheskoy khimii AN USSR.  
(Systems (Chemistry) (Crystallization)

CHERNOGORENKO, V.B.

~~Consecutive~~ crystallization eutectics in thermographic analysis  
of water - salt systems. Ukr. khim. zhur. 24 no.3:292-297 '58.  
(MIRA 11:9)

1. Institut obshchey i neorganicheskoy khimii AN USSR.  
(Systems (Chemistry))

CHERNOGORENKO, V.B.

Effect of temperature on structural and mechanical properties  
of pastes obtained from Gorbki bentonites. Bent.gliny Ukr.  
no.3:45-50 '59. (MIRA 12:12)

1. Nauchno-issledovatel'skiy institut stroymaterialov i  
izdeliy Akademii stroitel'stva i arkhitektury USSR.  
(Transcarpathia--Bentonite) (Paste)

MORACHEVSKIY, I.I., kand.tekhn.nauk; CHERNOGORENKO, V.B., kand.khim.nauk

Determining the temperature of maximum plasticity of ceramic  
materials according to their flowability. Stroi.mat. 5 no.7:32-33  
Jl '59. (MIRA 12:10)

(Ceramics) (Plasticity)

CHERNOGORENKO, V.B.

Temperature dependence of some structural and mechanical characteristics of clay pastes. Koll.zhur. 22 no.1:101-105 Ja-F 60.  
(MIRA 13:6)

1. Nauchno-issledovatel'skiy institut stroitel'nykh materialov i izdelyi, Kiev.

(Clay--Thermal properties)



MORACHEVSKIY, I.I.; SHTYGL'BERG, Ye.Ya.; CHERNOGORENKO, V.B.;  
KIRDO, M.A.

Relation between the heat of wetting, the bound water content,  
the hygroscopicity, and the ion exchange capacity of clays.  
Koll.shur. 22 no.3:340-343 My-Je '60. (MIRA 13:7)

1. Nauchno-issledovatel'skiy institut stroitel'nykh materialov  
i izdeliy, Kiev.  
(Clay) (Heat of wetting) (Ion exchange)

CHERNOGORATKO, V.B.

Determination of the forms of the moisture bond in some capillary-porus bodies by means of electric conductivity. Inzh.-fiz.zhur.  
no.6:17-22 Je '60. (MIRA 13:7)

1. Nauchno-issledovatel'skiy institut stroitel'nykh materialov  
i izdeliy, g. Kiev.  
(Porous materials) (Moisture)

CHERNOGORUKO, V.B.

Electric conductivity study of the system Ghasovyarsk clay - water.  
Koll. zhur. 22 no. 6:730-734 N-D '60. (MIRA 13:12)

1. Nauchno-issledovatel'skiy institut stroitel'nykh materialov,  
Kiyev.

(Clay)

MORACHEVSKIY, I.I.; CHERNOGORENKO, V.B.

Effect of shrinkage strain on the strength of the structure  
and the electric conductivity of clay masses. Stek, 1 ker.

18 no. 1:33-34 Ja '61.

(MIRA 14:1)

(Ceramics) (Clay—Electric properties)

GRANKOVSKIY, I.G.; CHERNOGORENKO, V.B.

Apparatus for determining the viscoplastic characteristics of  
cement pastes. Zav.lab. 28 no.3:374-376 '62. (MIRA 15:4)

1. Nauchno-issledovatel'skiy institut stroitel'nykh materialov  
i izdeliy Akademii stroitel'stva i arkhitektury USSR.  
(Building materials--Testing) (Rheology)

GRANKOVSKIY, I.G.; CHERNOGORENKO, V.B.

Characteristics of cement pastes and of concentrated suspension models. Koll. zhur. 25 no.4:402-406 J1-Ag '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut stroitel'nykh materialov i izdeliy, Kiev.

CHERNOGORENKO, V.B.; GRANKOVSKIY, I.G.

Structure-mechanical and other properties of cement paste during its transition from the viscoplastic to the resilient-brittle state.  
Koll.zhur. 25 no.5:600-605 S-O '63. (MIRA 16:10)

1. Nauchno-issledovatel'skiy institut stroitel'nykh materialov,  
Kiyev.

CHEBNOGORENKO, V.B., kand. khim. nauk; GRANKOVSKIY, I.G., inzh.

Relation of electric conductivity of cement and puddle to current  
frequency. Stroi. mat. 10 no.7:18 J1 '64 (MIRA 18:1)



CHERNOGORENKO, V.B.

Thermographic analysis of natural rubber extended with  
high dispersion metals. Kauch. i rez. 24 no.12:22-23 '65.  
(MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

Latex-01      Latex-01  
ADMISSION N°      APPROVED

AUTHORS      Natanson, V. Chernogor,

Interaction of natural rubber  
dispersed in paraffin at the insty

SOURCE      Khimiya, Khim. v. 27, 1

TITLE      Latex-01      metal polymer, natural  
aromatic solvent, catalyst, iron  
electro conductivity, rubber iron ge

ABSTRACT      Latex-01 obtained in a stage  
of natural rubber and styrene  
at different current densities of 5 a  
black and white latex. Their iron con  
tent is low and at higher iron  
concentration the iron was ex  
traction of iron was ex  
Fig. 1 on the x-axis. Increasing  
which decrease completely in compar  
get at 50% iron content. An increase

10 3 1974

ASSOCIATED RE: AFD-X4743

Incorporated dispersed iron was not  
substantially after the reaction with

ASSOCIATION. Institut Obshchey i neorganicheskoy Khimii, Akad. Nauk SSSR  
of General and Inorganic Chemistry, Moscow

STANDARD: 104743

NO REF COPY 1014

Card 2/7



L 52722-65 EPA(s)-2/EAT(m)/EPF(c)/EWG(m)/EPA'(s)-2/EAT'(s)/T Po-L 'Pat-10'

APR 22 1964

SECRET

colloidal particles of nickel and cobalt as they are formed at the cathode

isobutylene with colloidal nickel and cobalt in a two-layer electrolytic bath, were

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not known. These individuals indivi



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*[Faint, illegible handwritten notes]*

As a result, the model is able to capture the effects of the various factors on the response variable, and the model is able to predict the response variable with a high degree of accuracy.

1. The first step in the process of the investigation is the identification of the problem. This is done by the investigator who is responsible for the investigation. The investigator must identify the problem and the scope of the investigation. The investigator must also identify the objectives of the investigation and the methods to be used. The investigator must also identify the resources available for the investigation.

Card 2 / 3

ACCESSION NR: AP5014308

oxidation, which readily occurred, was observed in the polymer. The polymer was heated to 150°C and the atmosphere was changed to 100% O<sub>2</sub>. The results of the DTA analysis (for the polymer with 86.2% Fe). DTA showed that the presence of colloidal iron raises the temperature of thermal-oxidative degradation of the epoxy resin. DTA also revealed the existence of an exothermic reaction of oxidation of the polymer. The results of the DTA analysis are shown in Figure 1. The results of the DTA analysis are shown in Figure 1. The results of the DTA analysis are shown in Figure 1.

Card 2/3

1. INTRODUCTION

A. Background

1. The purpose of this study is to determine the effect of the proposed changes on the system. The study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study. The preliminary study will be conducted first, followed by the detailed study, and finally the final study.

2. The detailed study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

3. The final study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

4. The final study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

5. The final study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

6. The final study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

7. The final study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

8. The final study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

9. The final study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

10. The final study will be conducted in three phases: (1) a preliminary study, (2) a detailed study, and (3) a final study.

Conclusion

L 58918-66 EWT(m)/EWP(j)/T IJP(c) JWD/RM  
ACC NR: AP6025933 SOURCE CODE: UR/0226/66/000/007/0015/0021 72  
71  
B

AUTHOR: Chernogorenko, V. B.

ORG: Institute for the Problems of Materials Science, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Vacuum metallization of polymer powders: preparation, thermomechanical and electric properties

SOURCE: Poroshkovaya metallurgiya, no. 7, 1966, 15-21

TOPIC TAGS: polymer, polymer powder, powder metallization, vacuum metallization, zinc, polyethylene, epoxy resin, capron, polystyrene, powder compact, compact electric property, *thermo mechanical property, vacuum technique, metal coating*

ABSTRACT: Polyethylene, epoxy resin, capron, and polystyrene powders were vacuum coated with zinc at 260—290C. The thickness of the zinc film on the powder particles was found to depend upon metallization time; for instance, the film on polyethelene particles with a zinc content of 7.7% was 0.1 mkm thick. Metallized powders were compacted at 40—200C, i.e., below the polymer softening points. Compacts made of zinc-coated powders had higher electrical conductivity than that of uncoated powder compacts or compacts made of a mixture of polymer and zinc powders. For instance, compacts made from polyethylene powder with a 0.01-mkm-thick zinc layer had a resistivity of  $10^3$  ohm·cm compared to  $10^{12}$  ohm·cm for compacts made from

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uncoated powder or a mixture with 7.7% zinc powder. Metallized polyethylene and capron compacts compacted under pressure at  $1 \text{ kn/cm}^2$  grow in size under the effect of heat; this can be explained by the relaxation of high elastic stresses. This increase in size does not occur in metallized polyethylene powder compacted under  $1000 \text{ kn/cm}^2$ , nor in epoxy resin or in polystyrene. The softening point of metallized epoxy resin powder compacted at  $20^\circ\text{C}$  increases by  $10^\circ\text{C}$ . Metallization slightly increased the resistance of polymers to thermal oxidative degradation. 5 Orig. art. has: 3 figures and 1 table. [ND]

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